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Monday, August 18, 2014

Administrator Gina McCarthy
Environmental Protection Agency1200
Pennsylvania Avenue, N.W.
Washington, DC 20460

Re: Agricultural Worker Protection Standard Revisions; Proposed Rule Docket ID # EPA-HQ-OPP-2011-0184

Dear Administrator McCarthy,

Thank you for the opportunity to comment on the proposed revisions to the Agricultural Worker Protection Standard (WPS). CATA – The Farmworker Support Committee – is a migrant farmworker organization that is comprised of and governed by farmworkers who are actively engaged in the struggle for better working and living conditions. CATA's mission is to empower and educate farmworkers through leadership development and capacity building so that they are able to make informed decisions that will benefit their own well-being and that of the community. CATA has worked for 35 years with farmworkers in New Jersey, Pennsylvania, and Maryland seeing first-hand that lack of protections they have from pesticides and hearing from the workers themselves what it is like be exposed to pesticides.

The current regulations are not effective in preventing workers' exposures to toxic chemicals in the field. Over a decade ago, EPA admitted that even when there is full compliance with WPS, "risks to workers still exceed EPA's level of concern."[1] While we are pleased that EPA has proposed improvements to WPS, which will ostensibly increase protections for the nation's more than 2 million farmworkers and their families, our demonstrates that EPA does not have the capacity to enforce the current or proposed regulations.

To be clear, we believe that the best way to protect the health and safety of farmworkers is to mitigate and eventually eliminate the usage of pesticides in agriculture. More support should be given to Integrated Pest Management (IPM) programs, organic farming techniques and other methods to phase out the use of pesticides. Pesticides are inherently toxic materials – they are developed and used with the explicit intention to destroy or prevent growth of life. Farmworkers, especially those who mix and apply pesticides, are at the greatest risk to be poisoned because they are in direct contact with toxins at their highest concentrations on a daily basis.

Ever year approximately 1.1 billion pounds of pesticides are applied to agricultural crops in the United States.[i] The pesticide poisoning incidence rate among farmworkers is 39 times higher than the incidence rate found in all other industries in the U.S. combined.[ii] Pesticide exposure causes farmworkers to suffer more chemical-related injuries and illnesses than any other workforce in the nation.

According to EPA, there are about 10,000-20,000 pesticide poisonings occur each year among farmworkers.[iii] The actual number is likely much higher because the vast majority of injuries and illnesses in agriculture are not counted. According to new research, federal agencies responsible for tracking workplace hazards fail to report 77 percent of nonfatal occupational injuries and illnesses of farmworkers.[iv] Other factors that contribute to the underestimation of the problem include the inability and apprehension of affected workers to get medical care, medical misdiagnosis, and the absence of a coordinated national incident reporting system. Undercounting injuries and illnesses limits the ability to identify and address occupational health problems in agriculture, affecting both workers and society.

Farmworkers, farmworker families and surrounding communities are at an increased risk of pesticide exposure. Workers risk exposure from direct spray, aerial drift, or contact with pesticide residues on crops or in soil. Meanwhile handlers who mix, load, or apply pesticides are exposed to pesticides due to spills, splashes, and defective, missing or inadequate protective equipment. Families, especially children, are inadvertently exposed when pesticides from the field remain as residues on tools, clothes and skin, and are brought into the farmworker's home.[v] Aerial drift of pesticides into homes, schools, and playgrounds risks exposure of entire communities.[vi]

Research from various academic disciplines has clearly shown that the connection between pesticide exposure and common diseases affecting the public's health, including asthma,[vii] autism and learning disabilities,[viii] birth defects[ix] and reproductive dysfunction,[x] diabetes,[xi] Parkinson's and Alzheimer's diseases,[xii] and several types of cancer,[xiii] continues to strengthen despite efforts to restrict individual chemical exposure with risk-assessment policies.
To promote the health of rural communities and of those who harvest the food we eat, strong protections from pesticide exposure are urgently needed. We are concerned that the proposed rules fall short in several key areas:

Minimum Age: The proposed rule includes children as young as 16 to handle or work with hazardous pesticides. Because a developing body is much more susceptible to the toxic effects of chemicals than that of an adult, child farmworkers are more vulnerable. That vulnerability extends from childhood to adolescence. Considering the potential for serious health effects, it is not acceptable for children under the age of 18 to handle or work with pesticides. **We strongly recommend that WPS establish a minimum age of 18 years old to handle or work with pesticides.**

Central Posting of Information: The proposed rule aims to eliminate the central location that records application-specific information. Instead of the central location, employers would be required to maintain and make available information to workers, handlers, or their authorized representatives. However, due to language barriers and/or fear of retaliation, workers would be reluctant to request information from their employers. It is crucial to reinstate the central location of posting information and supplement additional pesticide-specific communication to protect the rights of

agricultural workers. **We strongly recommend that the central posting of information be reinstated and carefully enforced.**

Field Warning Signs: The proposed rule recommends mandatory field warning signs for treated areas when Restricted-Entry Interval (REI) is greater than 48 hours in outdoor settings (fields) or 4 hours in indoor settings (greenhouses and nurseries). Regardless of the length of the REI, mandatory field warning signs should be posted for all applications. Providing workers with basic safety information about pesticides applied in a consistent manner would ensure less pesticide exposure. **We strongly recommend that mandatory field warning signs be posted for all applications with specific information on the name of pesticide products and the dates and time of the application.**

Early Entry Worker Exception: The proposed rule establishes specific exceptions to sending workers (known as "early-entry workers") into a treated area while an REI is in effect. There should be no exceptions to allow early entry workers regardless of the pesticide applied. Employer and administrative exceptions in the current and proposed rule create loopholes and ultimately weaken regulations, whilst subjecting workers to the poisonous toxins associated with early entry conditions. **We strongly recommend that the updated rule establish no exceptions to allow for early-entry workers.**

Drift Protections: We support EPA's proposal to establish buffer zones around sprayed fields. Pesticide spray drift is a recognized threat to children and families that is unaddressed by the current regulatory protections. Pesticide applicators must stop spraying if anyone enters the treated area or the buffer zone. The buffer zones, however, should be at least 100 feet and should offer protection to homes, schools and other sensitive residential areas. **We strongly recommend that EPA expand its proposal to establish buffer zones to be at least 100 feet around sprayed zones and to offer special protections to sensitive residential areas.**

Training Frequency and Verification: We support EPA's proposal to require annual pesticide safety training for workers and pesticide handlers. The content of the training should be interactive and presented in a manner that is understood by farmworkers. Training content that includes "take-home-exposures", how to report violations to state enforcement agencies, and employers' obligation under the law, is critical information to reinforce the rights of workers. Based on our experiences, a wallet-sized verification card that is similar to the current voluntary verification card system would be the most practical option to validate training. **We strongly recommend that EPA improve the content and verification of training.**

While it is essential to address these shortcomings to have a meaningful regulation that protect farmworkers, the proposed rules alone will not remedy occupational exposure to pesticides. In order for the WPS to have any significance, EPA must also improve its guidance and oversight of state-level pesticide enforcement. Currently, the number of inspections and level of enforcement varies widely by state. For example, in 2012, the state of Florida reported conducting 584 inspections within 30 days of the expiration of a pesticide re-entry interval (Tier I inspections).[xiv] In California, the state with the greatest number of farmworkers, only 33 such inspections were reported in the

same year.[xv] The implementation of state-based enforcement efforts must be consistent and public reporting of those efforts must be improved upon. **We urge the Agency to use public reporting data and to coordinate with farmworker organizations such as ours to improve implementation of state-based pesticide enforcement.**

For further information about the specific inadequacies of the proposed rule, please see the detailed explanations below. Again, thank you for the opportunity to comment on the proposed revisions to the Agricultural Worker Protection Standard.

Sincerely,

CATA – The Farmworker Support Committee

Minimum Age:

The proposed rule includes children as young as 16 to handle or work with hazardous pesticides. Because a developing body is much more susceptible to the toxic effects of chemicals than that of an adult, child farmworkers are more vulnerable. That vulnerability extends from childhood to adolescence. Considering the potential for serious health effects, it is not acceptable for children under the age of 18 to handle or work with pesticides. **We strongly recommend that WPS establish a minimum age of 18 years old to handle or work with pesticides**.

Children under 18 years of age should not be handling pesticides. Working with pesticides is not appropriate work for minors because their bodies are still developing, and high levels of exposure to pesticides could have life-long health effects. A 1993 study by the National Research Council concluded that "the toxicity of pesticides can potentially be influenced by the immaturity of biochemical and physiological functions and body composition of developing children and adolescents."[xvi]

Children undergo significant development particular to the brain and reproductive system.[xvii xviii] Many registered pesticides are highly toxic to the brain and reproductive system.[xix] Exposing immature, developing systems to pesticides can cause long-term harm. Research has shown that even low levels of exposure to pesticides can have subclinical (not clinically visible), yet significant and detrimental, effects such as a decrease in intelligence or changes in behavior. These include general developmental delays, attention deficit hyperactivity disorder (ADHD) and autism.[xx] Exposure to pesticides may also increase the risk of chronic health problems among children, such as cancer, endocrine disruptor effects, neurological disorders and respiratory conditions.[xxi] The likelihood of developing such diseases later in life increases with additional years of exposure.

Pesticide poisoning surveillance data show that youth are more likely than adults to be injured by pesticides on the job.[xxii] Moreover, accidental spills, splashes, drift and improper mixing and handling are more likely with young people with less maturity and experience. Teens are capable of many jobs, but they are not yet mature enough to handle highly-hazardous chemicals like pesticides. Studies have shown that teens perceive themselves as less vulnerable to harm, and therefore do not follow the same safety precautions as adults -- even when they have received the same trainings.[xxiii]

Over a year ago, I arrived to the United States. When I am not in school, I work on a farm for some extra spending money. Only now do I know that I work with pesticides that are harmful to my family and me. I never thought about it before and no one ever told me.

~ Dulce, Child Farmworker, Age 15, Salisbury, MD

Other federal rules on child labor set the minimum age for high-hazard work at 18,[xxiv] and several states prohibit minors under 18 from handling pesticides.[xxv] At least half the states require a minimum age of 18 for a commercial pesticide applicator's license, and provide legal protections from exposure to "restricted use pesticides" for youths under 18. This should be a national standard for children in agriculture.

Central Posting of Information:

The proposed rule aims to eliminate the central location that records application-specific information. Instead of the central location, employers would be required to maintain and make available information to workers, handlers, or their authorized representatives. However, due to language barriers and/or fear of retaliation, workers would be reluctant to request information from their employer. It is crucial to reinstate the central location and supplement additional pesticide-specific communication to protect the rights of agricultural workers. **We strongly recommend that the central posting of information be reinstated and carefully enforced.**

Farmworkers are excluded from federal right-to-know rules that require employees to be informed about the health effects of specific chemicals they encounter at work. The Occupational Safety and Health Administration's (OSHA) Hazardous Communication Standard (HCS) entitles workers in non-agricultural sectors the right to training and written information about the short- and long-term health effects associated with the chemicals used in their workplaces.[xxvi] In contrast, WPS only requires farmworkers to receive general information about all pesticides. Specific information about their actual exposure would save lives and prevent illness by alerting workers to the symptoms of overexposure, help them take precautions to reduce risks, and ensure appropriate medical treatment.

The central posting of information requirements is one of the most violated requirements of WPS.[xxvii] While the current requirement for a central posting location has limitations, it is a critical source of information and should not be eliminated. Many farmworkers work in greenhouses, nurseries, and ferneries, where a central posting location of information is used effectively. The central posting requirement should be reinforced with the pesticide-specific hazard communication, such as labeling and Safety Data Sheet (SDS) in Spanish. In emergency and non-emergency situations, pesticide-specific hazard communication and application-specific information is essential to identify and prevent over-exposure. Healthcare providers need such information to assist in differential diagnosis and accurate incident reporting.

The proposed rule creates an unreasonable burden on workers. Farmworkers should not be expected to question their bosses in order to obtain information about pesticide applications that may endanger their health. Our experience demonstrates that farmworkers will not question their boss for fear of retaliation.

> ***You can ask if we know about what pesticides they use on the farm. Although we work with them, only the boss knows... One does not ask because the boss will say, "Go to work now. What do you care what pesticides I use? If you die, it is my problem." The package [records] can be there, but as everything is in English, one does not understand. For this reason, it makes no sense that workers would have to ask the employer to learn more about the pesticides – no one will do it. Employers must be liable to provide us this information without having to ask for it.***
>
> ***~ Pedro, Farmworkers, Bridgeton, NJ***

The central location of information provides agricultural workers with the best opportunity to have the same right as those employed in other sectors. The location should be obvious and easy to access, while the information should be pesticide-specific yet presented in a manner that is easily understood by workers. The central location of information is paramount to providing meaningful protections to farmworkers.

Mandatory Field Signs:

The proposed rule recommends mandatory field warning signs for treated areas when Restricted-Entry Interval (REI) is greater than 48 hours in outdoor settings (fields) or 4 hours in indoor settings (greenhouses and nurseries). Regardless of the length of the REI, mandatory field warning signs should be posted for all applications. Providing workers with basic safety information about pesticides applied in a consistent manner would ensure less pesticide exposure. **We strongly recommend that mandatory field warning signs be posted for all applications with specific information on the name of pesticide products and the dates and time of the application.**

According to the proposed rule, oral or written communication would satisfy the requirement for notification. Oral notification is prone to failure because there would be no mechanism of enforcement. Warning signs should be consistently posted at all usual points of entry for indoor and outdoor areas treated with pesticides. In addition, treated fields that are under an REI should have a sign which states the following specific information: name of pesticide applied, application date and times, REI, contact information for employer, on-farm manager, or pesticide applicator and date and time that REI expires. Signs should be consistently removed within 24 hours after the REI expires. Requiring similar written notifications for all pesticide applications would better inform farmworkers without placing significant additional burdens on employers.

> ***It is important to have notification on all pesticides information to know which ones are being applied. Sometimes there are farmworkers who do not know which ones are being applied and they enter the field without knowing, and it could be a very strong pesticide.***
>
> ***~ Cornelio, Farmworker, Hammonton, NJ***

When protective measures are taken, pesticide exposure can be prevented. In response to a series of worker exposure incidents in the 1990s, Monterey County in California began to require agricultural employers to post areas treated with a pesticide with an REI of 24 hours or longer. Since its implementation, this county-specific requirement has led to a significant reduction in pesticide-related illnesses caused by entering a treated area before the expiration of an REI.[xxviii] A 2001 report from the California Department of Pesticide Regulation noted stakeholder consensus on and support for the requirement, stating: "All participants strongly believe that field posting prevents workers from early reentry. Monterey County participants support their 24-hour posting regulations, even though compliance is costly, because field posting prevents both application and reentry errors."[xxix] The lesson in Monterey County is simple – the benefits of clear, consistent written communications about short-term REI notifications outweigh the costs of preventing early-entry exposure.

Another area of concern is the changes to the required text on warning signs. The change to the required text on warning signs would be "Entry Restricted" instead of "Keep Out" at the bottom of the sign. Changing the text of the warning sign would make it more difficult for farmworkers to understand. "Keep Out" tests at a Grade 0 reading level, while "Entry Restricted" tests at a Grade 17 reading level.[xxx] The text on the sign should remain to read "Keep Out" which is more understandable to the majority of the farmworker population.

Written communication that protects farmworkers from early-entry exposure should be simple and easy to understand. Field warning signs are the best way to adequately notify farmworkers about specific pesticide applications. That being said, field warning signs should be consistently posted for all pesticide applications.

Early-Entry Workers:

The proposed rule establishes specific exceptions to sending workers (known as "early-entry workers") into a treated area while an REI is in effect. There should be no exceptions to allow early entry workers regardless of the pesticide applied. Employer and administrative exceptions in the current and proposed rule create loopholes and ultimately weaken regulations, whilst subjecting workers to the poisonous toxins associated with early entry conditions. **We strongly recommend that the updated rule establish no exceptions to allow for early-entry workers.**

EPA proposed to codify exceptions that allow employers to direct farmworkers into treated areas under REI. "Short-term," "limited contact" and "irrigation" activities are considered employer exceptions. Requirements for these activities include no hand labor and work periods that are limited to 8 hours in a 24-hour period. However, the Agency does not have the capacity to enforce these requirements. Employer exceptions, in general, are a way for the agribusiness to profit off farmworkers' health.

In addition to employer exception, the proposed rule limits administrative exception. Only EPA or state/tribe lead pesticide agencies can declare an agricultural emergency in which an early-entry worker can be in a treated area when double-notification products are applied (i.e., products whose labeling requires both oral and posted notification of pesticide treatments) for no more than 4 hours in 24-hour day. During true agricultural emergencies, there are other ways to attend to fields besides sending farmworkers into harm's way.

Farmworkers who enter a treated area prior to the expiration of an REI are more adversely affected than those farmworkers who enter the treated area after the REI has expired.[xxxi] Early-entry workers

are more likely to suffer from respiratory issues, rashes, and other illnesses.[xxxii] Results from a recent SENSOR-Pesticides/California Department of Pesticide
Regulation analysis of the most common factors contributing to incidents of pesticide poisoning indicates that "early reentry into a recently treated area" was the second most common factor.[xxxiii] The report cites early reentry as contributing to 17% (336) of all acute pesticide poisoning cases for which a cause was identified in the agricultural industry between 1998 and 2005.[xxxiv] Early-entry workers are coerced into labor without due consideration to their health.

You start to feel sick, your eyes get itchy and watery, you get a headache, you are constantly thirsty, you always have the urge to drink water – these are the side effects of working closely with pesticides.

~ Felix, Farmworker, Bridgeton, NJ

We strongly recommend that the updated rule not establish exceptions to allow for early-entry workers. Early-entry workers face more danger than nearly any other worker in agriculture. Exceptions to allow early-entry workers weaken the protections that safeguard farmworkers' health and labor rights.

Drift Protections:

We support EPA's proposal to establish buffer zones around sprayed fields. Pesticide spray drift is a recognized threat to children and families that is unaddressed by the current regulatory protections. Pesticide applicators must stop spraying if anyone enters the treated area or the buffer zone. The buffer zones, however, should be at least 100 feet and should offer protection to homes, schools and other sensitive residential areas. **We strongly recommend that EPA expand its proposal to establish buffer zones around sprayed fields that are at least 100 feet and that offer special protections to sensitive residential areas.**

Toxic pesticides are prone to aerial drift during and after application due to sprayer's error, wind, and volatilization. This is a common source of exposure to pesticides. A number of epidemiological studies link pesticide drift to specific adverse health effects in humans, including autism spectrum disorders,[xxxv] Parkinson's disease,[xxxvi] and childhood acute lymphoblastic leukemia.[xxxvii]

I have come across situations of pesticide drift. One time, I visited a manager who did not use pesticides, but his neighbor did. When I informed the manager about the dangers of pesticide drift, and that he should inform his workers when his neighbor applies pesticides, he did not listen. His response is similar to many of the managers that I have come across.

~ Dina Gonzalo, Pesticide Trainer, Salisbury, MD

The proposal aims to address this danger by merely restricting entry into fields adjacent to treated areas. However, the proposal omits protection to those who are not on an agricultural establishment. Oftentimes toxic pesticide drift beyond agricultural property lines, thus this safeguard should extend into neighboring lands. Currently, federal and state laws provide substantial buffer zones to protect vineyards[xxxviii], greenhouses[xxxix] and salmon[xl] habitat from pesticide spray drift. Effective buffer zones are needed for farmworkers and the surrounding communities as well.

Pesticide spray drift settles into neighboring schools, homes and other sensitive residential areas and is detrimental to the public's health. For instance, a recent report from the California Department of Public Health finds that over a third of public schools in the state have pesticides of public health concern applied within a quarter mile of the school, including persistent and toxic substances like chlorpyrifos, methyl bromide, and malathion.[xli] In addition, the California Department of Pesticide Regulation documented 3,997 reported pesticide drift incidents in the state between 1992 and 2007.[xlii] Moreover, the actual number of drifts is likely much higher due to obstacles of reporting.[xliii]

Although EPA recognizes the severity of exposure resulting from pesticide drift, the agency refuses to implement measures to safeguard the health of populations, children in particular, in an urgent manner.[xliv] For decades, EPA has required pesticide labels to include general admonitions to avoid spray drift, but EPA has also repeatedly recognized that this generalized label direction is inadequate to protect innocent bystanders, such as children, from drift. This failure precludes an entire generation of children from receiving basic protections to safeguard their health.

Buffer zones should be establish to protect surrounding communities from the dangers of pesticide drift. Buffer zones should be at least 100 feet and provide special protection to sensitive residential areas. For health rural community to prosper, the new rule must address the issue of pesticide drift.

Training Frequency and Verification:

We support EPA's proposal to require annual pesticide safety training for workers and pesticide handlers. The content of the training should be interactive and presented in a manner that is understood by farmworkers. Training content that includes "take-home-exposures", how to report violations to state enforcement agencies, and employers' obligation under the law, is critical information to reinforce the rights of workers. Based on our experiences, a wallet-sized verification card that is similar to the current voluntary verification card system would be the most practical option to validate training. **We strongly recommend that EPA improve the content and verification of training.**

Based on our experience from working directly with farmworkers, they what to know about the pesticides used in the workplace and how they can protect themselves and their families. However, the training is not adequate for many reasons.

What workers indicate to us is that many times they are not receiving all the information they need. Some bosses give a video to the workers, for them to watch when they have time. The truth is, most of the time, they do not even watch it. Even if they watch it, what then? They do not have anyone to ask questions. How are they going to know what to do if there is no one to ask?

~ Jose Manuel Guzman, CATA Organizer, Kennett Square, PA

Training on preventing "take-home exposures" is particularly important. Pesticide take-home exposure occurs when farmworkers take home pesticide residues that cling to their skin, clothing, hats, boots, tools, lunch coolers, car seats and any other items in the work environment. Direct correlations have also been observed between levels of pesticides in house dust and the number of farmworkers residing in a household.[xlv] Furthermore, studies have shown that the levels of pesticide metabolites in children of farmworkers are significantly higher than in children of non-farmworkers[xlvi] and are correlated with pesticide concentrations in house dust samples[xlvii] as well as with the metabolite levels of adult farmworkers in the same household.[xlviii] [xlix] Training should identify successful strategies for reducing the take-home pathway of pesticide exposure.

In addition, training content on how to report violations to state enforcement agencies and employer's obligation under the law is crucial to safeguard the labor rights of farmworkers. Because WPS does not protect employee confidentiality, farmworkers are afraid to report pesticide violations because they fear the loss of their jobs or other retaliation. EPA should adopt the same protections against retaliation that are provided by OSHA for employees who report an unsafe condition or practice.[l] The Occupational Safety and Health Act of 1970 gives employees and their representatives the right to file a complaint and request an inspection of their workplace if they believe there is a serious hazard.[li] Further, the Act gives complainants the right to request that their names not be revealed to their employers.[lii]

We recommend a wallet-sized verification card that is similar to the current voluntary verification card system to validate training. This option would require the employer or trainer to provide every trained worker and handler with a wallet-sized verification record that contains the proposed recordkeeping information, instead of the proposal to provide a photocopy of the training recordkeeping form. Distribution of the training verification cards would be limited to trainers who meet the proposed qualifications. The cards would be issued by EPA on an annual basis and would indicate a date after which the card would no longer be valid. The farmworkers that we work with agree that wallet-sized verification cards are useful and important.

In my opinion, a card is better than a big piece a paper. It is easier to carry and if you change jobs, then you can show that you satisfied the training.

~ Efren, Farmworker, Avondale, PA

It is important that trainers of workers and handlers be present during the entirety of a training session in order to answer questions. Trainers should facilitate an interactive discussion based on the topics of the training, adult learning principles and communication across languages and cultures. Trainers must also ensure that the training is presented in a manner as free of distractions as possible. We urge EPA to continue to work with farmworker organizations such as ours to administer train-the-trainer programs that meet the Agency's standards.

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[xvi] Cited in NIOSH Recommendations to the U.S. Department and Labor for Changes to Hazardous Orders 81 (May 2002) at 95.

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[xxv] *See* for example, prohibitions in New Jersey (N.J. Admin. Code 12:58-4.15), and Washington (WAC 296-131-125(2)(a)).

[xxvi] See OHSA's Hazard Communication Standard: [HYPERLINK "https://www.osha.gov/dsg/hazcom/" \h]

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[xxxiv] Ibid.

[xxxv] E.g., Roberts, E., et al., *Maternal Residence Near Agricultural Pesticide Applications and Autism Spectrum Disorders Among Children in the California Central Valley*, Envtl. Health Perspectives, Vol. 115, No. 10, at 1482 (Oct. 2007)

[xxxvi] E.g., Costello, S., et al., *Parkinson's Disease and Residential Exposure to Maneb and Paraquat From Agricultural Applications in the Central Valley of California*, Am. Journal of Epidemiology, Vol. 169, No. 8, at 919 (Jan. 2009)

[xxxvii] E.g., Rull, R., et al., *Residential Proximity to Agricultural Pesticide Applications and Childhood Acute Lymphoblastic Leukemia*, Envtl. Research, Vol. 109, at 891 (July 2009)

[xxxviii] See EPA's *Soil Fumigant Mitigation Facsheet: Buffer Zones* (2012). Retrieved from[HYPERLINK "http://www.epa.gov/opp00001/reregistration/soil_fumigants/factsheets/sfm-buffer-zones-2012.pdf" \h][xxxix] Ibid.

[xl] See EPA on *Reinstituted Buffer Zones for Five Pesticides to Protect Pacific Salmon.* Retrieved from[HYPERLINK "http://www.epa.gov/oppfead1/cb/csb_page/updates/2014/buffer-zones.html" \h]

[xli] See California Department of Public Health. *Agricultural Pesticide Use Near Public Schools in California.* (2014, April). Retrieved from [HYPERLINK "http://bloximages.newyork1.vip.townnews.com/montereycountyweekly.com/content/tncms/assets/v3/editorial/5/ea/5eae8f76-ccd6-11e3-8e1d-0017a43b2370/535af85bbc029.pdf.pdf" \h][HYPERLINK "http://bloximages.newyork1.vip.townnews.com/montereycountyweekly.com/content/tncms/assets/v3/editorial/5/ea/5eae8f76-ccd6-11e3-8e1d-0017a43b2370/535af85bbc029.pdf.pdf" \h]

[xlii] California Department of Pesticide Regulation, *California Pesticide Illness Query.* Retrieved from[HYPERLINK "http://apps.cdpr.ca.gov/calpiq/" \h]

[xliii] See General Accounting office, *Pesticides: Improvements Needed to Ensure the Safety of Farmworkers and Their Children* (2000, March). Retrieved from [HYPERLINK "http://www.gao.gov/archive/2000/rc00040.pdf" \h]

[xliv] See Earthjustice's Press Release: *Groups Challenge EPA Failure to Protect Children from Pesticides.* Retrieved from [HYPERLINK "http://earthjustice.org/news/press/2014/groups-challenge-epa-failure-to-protect-children-from-pesticides" \h][HYPERLINK "http://earthjustice.org/news/press/2014/groups-challenge-epa-failure-to-protect-children-from-pesticides" \h]

[xlv] McCauley LA, Lasarev MR, Higgins G, et al. *Work characteristics and pesticide exposures among migrant agricultural families: a community-based research approach.* Environ Health Perspect. 2001;109:533–538.

[xlvi] Lu C, Fenske RA, Simcox NJ, Kalman D. *Pesticide exposure of children in an agricultural community: evidence of household proximity to farmland and take home exposure pathways.* Environ Res. 2000;84:290–302.

[xlvii] Coronado GD, Vigoren EM, Thompson B, Griffith WC, Faustman EM. *Organophosphate pesticide exposure and work in pome fruit: evidence for the take-home pesticide pathway.* Environ Health Perspect. 2006;114:999–1006.

[xlviii] Curl CL, Fenske RA, Kissel JC, et al. *Evaluation of take-home organophosphorus pesticide exposure among agricultural workers and their children.* Environ Health Perspect. 2002;110:A787–792.

[xlix] Coronado GD, Vigoren EM, Thompson B, Griffith WC, Faustman EM. *Organophosphate pesticide exposure and work in pome fruit: evidence for the take-home pesticide pathway.* Environ Health Perspect. 2006;114:999–1006.

[l] See OSHA's *Procedures for the Handling of Retaliation Complaints Under Federal Employee Protection Statutes.* Retrieved from: [HYPERLINK "https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=13269" \h][li] See OSHA's *How to File a Complaint with OSHA.* Retrieved from: [HYPERLINK "https://www.osha.gov/as/opa/worker/complain.html" \h]

[lii] Ibid.